MEDICAL PERSONNEL'S PERCEPTIONS OF THE USE OF TREATMENT ROOMS

by

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ABSTRACT

This study aimed to understand medical professionals' perceptions of the use of treatment rooms for intravenous (IV) and venipuncture procedures with children. A treatment room is a room separate from the child's inpatient hospital room where medical procedures occur. The Department of Health and Human Services (1992) recommends the use of treatment rooms as a strategy to reduce and manage children's pain from medical procedures. Although the use of treatment rooms is considered the standard of care for many hospitals in the U.S., Primary Children's Hospital does not regularly use treatment rooms in their child inpatient medical units. The current study surveyed medical professionals at Primary Children's Hospital, Salt Lake City, Utah about their perceptions of the use of treatment rooms for IV insertions and blood draws.

Medical professionals completed an electronic survey, which consisted of 31 questions, including 28 close-ended questions and 3 open-ended questions. Items addressed administrative challenges, benefits, negative impact on child, and the respondent's general knowledge of and experience with treatment rooms. Nurses and IV team members perceived greater administrative challenges and negative impacts on children and fewer benefits to children of the use of treatment rooms than did Child Life Specialists. Specific concerns and challenges with the use of treatment rooms were identified. Features of an ideal treatment room were also noted. The results of this study

will provide many pediatric hospitals, including Primary Children's Hospital, with valuable knowledge on how their staff perceive the use of treatment rooms.

For my family and Josue

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CHAPTER 1

INTRODUCTION

Many children experience illnesses that require hospitalizations. For example, in 2009, there were approximately 6.4 million hospital stays for children who were 17 years or younger in the U.S (Healthcare Cost and Utilization Project [HCUP], 2011). In fact, pediatric hospitalizations accounted for about 17 % of all hospital stays, indicating that pediatric hospitalizations are numerous. The average length of stay for these pediatric hospitalizations was 3.8 days per admit. It is estimated that in 2009, $33.6 billion was spent for children's hospital stays, roughly 9 % of the total cost for patient care (HCUP, 2011).

Healthcare facilities can be threatening and intimidating places for many, especially for children who do not yet possess the sophisticated coping skills that are often required to deal with the myriad of new and challenging experiences that occur in a hospital (Norton-Westwood, 2011, 2012). Children are exposed to strange faces, foreign sounds, and novel smells and sights, and this unfamiliarity can evoke fear, anxiety, and stress (Norton-Westwood, 2011). Furthermore, children face other challenges during hospitalization, including the fear of injections, medications, symptoms of disease, pain, and lack of information (Samela, Salanterä, & Aronen, 2010). These types of fears, dubbed "medical fears," have been described as one of the types of fears children

experience, along with fear induced by other life experiences such as separation from parents, going to school, or a growling dog (McMurtry, Noel, Chambers, & McGrath, 2011). It is generally believed that younger children may be at most risk for negative effects of hospitalization. One study asserts that children from ages 6 months to 4 years may be the most vulnerable, as it appears that children in that age range seem to be at most risk for displaying adverse reactions (Mabe, Treiber, & Riley, 1991). Another study argues that children aged 2-5 years show the greatest frequency of extreme reactions to hospitalization (King & Ziegler, 1981). It is generally agreed that preschoolers have more hospital-related fears than older children due to their unique developmental stage. Preschool-aged children have difficulty separating reality from imaginary events; for them, the boundaries are often blurred (Kuttner, 1991). Their cognitive states move fluidly from a "here-and-now" reality-bound state to imaginary play in which fantasy and reality often blend together. These particular phenomena are especially common for children aged 3 to 5 years, who often play and talk with imaginary playmates (Kuttner, 1991). Moreover, a preschool-aged child has restricted abilities to express and manage fear (Samela, Salanterä, & Aronen, 2008). Accordingly, this study focused on the perceptions of the use of treatment rooms in this particularly vulnerable population of children 2-5 years old. The goal of this study was to examine perceptions of a specific hospital procedural policy. Specifically, the present study examined the issue of how treatment rooms are *perceived* by medical personnel. Do they perceive that treatment rooms benefit the child or are they more hassle than they are worth? Medical professional's perceptions of treatment rooms are critical to whether the treatment rooms are utilized and implemented in a hospital setting, regardless of the actual effect of

treatment rooms on children. If medical professionals perceive many barriers or if personnel perceive that they will be detrimental to children, they may be less likely to advocate for and implement the use of treatment rooms.

Effects of Hospitalization on Children

Children's psychological distress is a key facet that impacts their hospitalization experience. Children often undergo painful procedures like intravenous insertions, wound debridements, and bandage changes as a regular part of their medical care. As they become aware of the pain and discomfort of these procedures, they may experience acute anxiety, fear, and distress when anticipating and undergoing even minor medical procedures (Fanurik, 2000). When receiving extended medical care, children may develop a range of distress behaviors that include hitting, screaming, crying, pinching, and verbal protests in response to adverse medical treatments (Benore & Enlow, 2013). Current conceptualizations of distress follow the earlier work by Katz, Kellerman, and Siegel (1980, 1981), who defined distress as an organism's reaction to unpleasant stimuli, which includes anxiety, fear, discomfort, and pain (Lindholm et al., 2009). Manifestation of this response can be expressed through three categories: (1) a behavioral component that includes agitation, movement, grimacing, avoidance, and crying; (2) a phenomenological component that includes self-reports of fear and anxiety; and finally, (3) a physiologic component that encompasses increased heart rate, hormonal reactions, and muscle tension (Lindholm et al., 2009). In addition, these authors argue that measuring phenomenological distress is difficult with young children because they may not have adequate verbal skills to self-report their distress, and cannot complete most

self-report measures, which are written. Furthermore, due to the intrusive nature of measuring physiological changes (e.g., attaching a pulse oximeter), it is often appropriate to measure behavioral indicators of distress among infants and young children as a means of studying this phenomenon (Lindholm et al., 2009).

Understandably, children often experience distress as they go through invasive procedures during hospitalization. Many studies indicate that the number of invasive procedures experienced by children is positively related to the level of fear, anxiety, and stress during and following hospitalization (Child Life Council, 2008). Consequently, many children consider these procedures negative experiences (Wilson, Megel, Enenbach, & Carlson., 2010). Of special interests are intravenous cannula insertions and venipunctures. They are noted to be the two most frequent sources of pain in hospitalized children (Kennedy, Luhmann, & Zempsky, 2008) and are rated as some of the most feared medical events (Sparks, Setlik, & Luhman, 2007). For example, in one particular study, researchers examined hospital-related fears among 4-to-6-year-olds (N=89). Forty-nine of those children were interviewed in a kindergarten (and were not hospitalized); the other 40 children were patients in pediatric surgical or neurological wards in a university hospital. The researchers found that over half of the children in both groups reported that they were fearful of shots, a type of invasive procedure that most children are familiar with (Samela, Salanterä, & Aronen, 2008).

In addition, numerous other self-report and observational studies of adolescents and children have concluded that children and adolescents going through routine venipunctures persistently exhibit high levels of distress and pain (Kennedy et al., 2008). Due to frequent responses of pain and distress in response to these procedures, both

pharmacological and nonpharmacological methods have been developed to counteract the negative impact of procedures on children. Of the former category are the usage of buffered lidocaine and eutectic mixture of local anesthetic (EMLA) cream before IV insertion (Sparks, Setlik, & Luhman, 2007), which reduces pain by numbing the area. Of the latter category are the usage of distractors such as bubble blowing or touch, cognitive-behavioral strategies such as story telling or guided imagery, and positions of comfort [e.g., such as the upright positioning of the child rather than forcing child to lie down] (Sparks, Setlik, & Luhman, 2007).

Research suggests a correlation between childhood fear and pain related to medical procedures and adult fear, avoidance of health care situations, and pain sensitivity (Kennedy et al., 2008). For example, it is reported that for some individuals, fear of needles can persist into adulthood. Some even live with potential lifelong negative ramifications, such as avoidance of donating blood or fainting episodes in response to a needle after frequent needle procedures such as IV cannulation, venipuncture for laboratory blood sampling, and intramuscular injections (Ellis, Sharp, Newhook, & Cohen, 2004). Furthermore, research suggests many negative short- and long-term repercussions for children if painful procedures are not sufficiently managed. Children may experience preemptive vomiting and nausea, eating problems, insomnia, and treatment nonadherence (Ellis et al., 2004). Finally, research even indicates that hospitalization in childhood in combination with other frightening experiences may delay a child's development and has the potential to intensify the risk of health problems later in life (Samela, Salanterä, & Aronen, 2010). These findings point to the importance of making the best clinical decisions regarding painful procedures, especially venipunctures,

for younger children. Therefore, appropriate interventions must be created that can diminish children's worries and bolster their coping strategies during hospitalization, especially during IV insertion and venipunctures.

Importance of Hospital Environment

Given such documentation of children's negative experiences in hospitals, Coyne (2006) suggests structuring hospital environments to be more child-centered in order to decrease children's distress and the likelihood that such experiences will have effects that persist into adulthood. However, there are challenges with creating and structuring appropriate hospital environments. The present study will explore hospital staff's perception of the use of treatment rooms for intravenous (IV) and venipuncture procedures, as one possible strategy to reduce children's distress.

In the past 20 years especially, hospital administrators and staff have worked diligently to enhance the pediatric hospital environment, clearly accepting that hospitalization may be a traumatizing and stressful event for children. As a result, they have instituted many positive changes that include providing space for children to play, lifting time restrictions for visiting hours, allowing access to computer, games, movies, pet and music therapies, as well as employing Child Life Specialists (CLS) as staff in multiple inpatient, outpatient, and diagnostic departments (Wilson, Megel, Enenbach, & Carlson, 2010). CLS are certified professionals trained in nonmedical therapeutic service created to serve the social, intellectual, and psychological needs of pediatric patients. They help children and their families as they navigate their healthcare experiences. Within the hospital environment, CLS work towards promoting positive development of

the children and aim to diminish the overall anxiety and stress related with their hospitalization (Bandstra et al., 2008).

In addition to staff and policy changes, modifications to the physical environment such as providing colorful play rooms have been made to serve the physical and psychosocial needs of children (Wilson et al., 2010). Research literature suggests that there is a connection between one's health outcome and the surrounding physical environment in which the person stays or receives treatment (Mourshed & Zhao, 2012). The effects of the physical environment on different aspects of patient care such as their healing process, recovery, and well-being are now being emphasized in construction of healthcare facilities. Healthcare facilities (HFC) are defined as "places where patients with health conditions go for treatment, which is provided by specialists and other care professionals" (Huisman, Morales, van Hoof, & Kort, 2012, p. 70). In the past, HCF design was centered on its functionality such as having enough space for laboratories or having wide enough doors to accommodate beds. These functional arrangements were efficient but were believed to be psychologically "hard" designs (Ulrich, 1991). These spaces were believed to be stressful or not adequate in meeting the psychological needs of staff, visitors, and patients (Ulrich, 1991).

In a search for appropriate hospital environment for children, pediatric pain specialists have advised that all medical procedures be conducted in a separate "treatment room," not in children's assigned hospital inpatient room (Fanurik, 2000). The rationale behind the suggestion is that children's own hospital rooms need to remain a safe place where the children are not constantly living in fear as they expect occurrence of another medical procedure (Fanurik, 2000). In other words, the crux of the idea is that an

inpatient hospital room needs to remain a safe haven, where children are able to stay, rest, and heal without consistently being alert and fearful anticipating painful medical procedures.

One of the most comprehensive guidelines of evidence-based clinical care set forth by the U.K. paediatric psychology network asserts that pediatric patients undergoing any acute medical procedure reap benefit from "good preparation." One of the practices that constitute "good preparation" is the provision of the appropriate environment in which the procedure takes place (Duff et al., 2012). Thus, treatment rooms may be one component of an appropriate physical environment. In fact, medical professionals recognized the importance of maintaining a safe space for hospitalized children as long as 50 years ago. For example, according to a report released by the Central Health Services Council (1959) of the British Ministry of Health, a treatment room was advocated for minor surgical procedures and was noted to be a necessary add-on to a children's ward.

Furthermore, in the article written by Stephens and Hall (1999), use of treatment rooms was discussed as one of the techniques to comfort children during stressful procedures. The justification is that when medical personnel enter a child's room unannounced, children have difficulty differentiating whether the healthcare staff is coming in to perform a stressful procedural visit or a noninvasive check on the child. Therefore, the child remains in a state of vigilance and anxiety. This anxiety and vigilance is counterproductive to creating a safe space where the child can rest, relax, and heal. In addition, these authors note that especially with wards with multiple-bed rooms, children experience added anxiety as they hear other children in the same room express

distress and pain as they are going through different procedures. The idea behind a treatment room, once again, is that the child's inpatient hospital room remains as a "safe haven" for the child.

Despite the recommendation of the use of treatment rooms, Stephens and Hall (1999) identified a few obstacles to implementing the use of treatment rooms in a hospital setting. First, the staff may perceive time spent on moving the child to a treatment room as burdensome. However, the authors argue that not moving the child could save time initially, but ultimately more time will be spent comforting a distressed child whenever the staff enters the room. Second, the authors acknowledge that certain clinical conditions, hospital design, or necessary medical equipment may prevent moving a child to a separate hospital room. In these cases, the authors propose that staff utilize a distinct and consistent discriminating signal such as ringing a bell, wearing a unique hat, or carrying a specific stuffed animal when entering the room to conduct a procedure. Third, the authors acknowledge the possibility that the child may subsequently come to fear the treatment room. They offer no remedial solution for this challenge, but suggest that although children may come to actively avoid and dread the treatment room, at least the child can be certain that from the moment they leave the treatment room, their stressful procedures are over (Stephens & Hall, 1999).

The American Academy of Pediatrics recommends that a separate treatment room be utilized for clinical assessment and procedures as part of their appropriate facility and equipment guidelines for patient care in community hospitals (Sigrest & the Committee on Hospital Care, 2003). Furthermore, the Child Life Council lists the use of treatment rooms for procedures as a technique they use to keep children's hospital experiences

positive. This recommendation falls under the "environmental measures" in their report (Child Life Council, n.d.). As for the design of the treatment room, Johnson, Jeppson, and Redburn (1992) argue that the treatment room must be large enough to accommodate two family members, a staff person, and possibly a student. They propose that there should be interactive toys attached to the wall or to the treatment table to be used as distraction tools during painful procedures. Moreover, they suggest having art on the ceilings and the walls to make the rooms less intimidating and to provide opportunities for distraction.

Currently, there are 45 Level 1 pediatric trauma centers verified by the American College of Surgeons (Childress Institute for Pediatric Trauma, 2014). After conducting a Google keyword search of "treatment room," I found 28 hospital websites that explicitly mentioned the use of or advocacy of treatment rooms on their websites. Twelve of those hospitals were part of the 45 pediatric trauma centers (Appendix A; Appendix B). Thus, over a quarter (27%) of the Level 1 pediatric trauma centers in the US explicitly discuss the use of treatment rooms on their websites. For example, UC Davis Children's Hospital has the following language on their website justifying the use of treatment rooms: "A separate treatment room for unpleasant or painful procedures, such as starting an intravenous line, helps to preserve their room as a 'safe place.'"

However, despite these policy recommendations, research specifically addressing the use of treatment rooms in pediatric patient populations is hardly sufficient. Although researchers and medical professionals advocate for the use of treatment rooms, there is no research on whether or not these theoretical frameworks are valid or are supported by empirical data. Furthermore, the current guidelines for clinical practice are somewhat vague. For example, current clinical practice and policy guidelines on pediatric acute pain

management issued by the Department of Health and Human Services (1992) state that attention must be given to environmental comfort and further advocate "unless absolutely necessary, do not perform procedures in child's bed or room" (p. 8). The policy recommending the use of treatment rooms remains ambiguous, with difficulty deciphering in which situations the use of treatment rooms are "absolutely necessary." Finally, such mandatory policy dictating that all pediatric procedures be conducted in a treatment room overlooks complex clinical decisions and circumstances that are unique to each child's medical needs and conditions (Fanurik et al., 2000). Thus, the policy regarding treatment room usage is commendable in its intentions to reduce pediatric pain and help children to experience optimal hospital stays. However, there is not enough evidence, data, or discussion of what kind of impact the physical location of inpatient procedures may have on the patient or whether or not the implementation of treatment rooms is practical in a hospital setting.

A related area of research that has not been sufficiently addressed is the issue of how treatment rooms are perceived by medical personnel. That is, what are their views on the use of treatment rooms? Are they aware of current guidelines? What are their views and perceptions of benefits and/or challenges associated with the use of a treatment room? To date, only one published study has addressed such issues.

In the research by Fanurik et al. (2000), the researchers administered a vignette-type survey to inpatient nurses aimed at evaluating their preferences regarding room choice depending on the age of the child and the invasiveness of the procedure. The survey was completed by a total of 126 nurses. There were six types of vignettes that varied by the age of the patient (3, 9, 14 years old) and the invasiveness of the procedure

(lumbar puncture (LP) and intravenous line placement). As for the ages of the patients, they were chosen to reflect Piagetian stages of cognitive development: preoperational (2-6 years), concrete operational (7-11 years), and formal operational (12+ years). The researchers also asked a series of other questions such as the nurses' preferred performance site of the procedure, the nurses' previous training, additional factors that nurses felt should be considered for room selection for procedures, the extent to which the issue was addressed, and suggestions for future guidelines.

A sample question included: "A 3-year-old patient is schedule for a diagnostic lumbar puncture. Given this situation, would you recommend this procedure be performed in a) patient's hospital room b) treatment room."

Fanurik et al. (2000) found that child age and invasiveness of the procedure influenced nurses' preferences for the use of treatment rooms for procedures. For example, 75% of the nurses believed that treatment rooms should be used for a lumbar puncture compared to 35% for intravenous insertion. Furthermore, the treatment room was most likely to be recommended for 3-year-olds over older children and adolescents. The nurses believed that child-related factors such as coping skills and health conditions, as well as type of hospital room (i.e., semiprivate), availability of treatment room, and urgency of the procedure need to be considered when choosing a treatment site. Lastly, the issue of the efficacy of this procedure was raised as some respondents worried that moving the child to another room would create more fear and anxiety, regardless of the child's age.

With the exception of this study, there is a dearth of data on how medical personnel perceive the practicality and effectiveness of treatment rooms. Fanurik et al.

(2000) only studied a sample of nurses at a single hospital. The authors suggested that future research extend this inquiry in other institutions. They also advised that the perceptions of other populations be examined, such as technicians. The current study aims to add to the treatment room literature by examining various medical personnel's views of challenges and benefits of the use of treatment rooms.

CHAPTER 2

METHOD

Participants

Medical personnel working at Primary Children's Hospital (PCH) in Salt Lake City, Utah were asked to participate in the study. Our primary participants of interest were physicians (M.D. and D.O.), nurses in the Children's Medical Unit (CMU) and Children's Surgical Unit (CSU) (R.N.), Child Life Specialists (CLS), administrators, and intravenous (IV) team members. The survey was distributed to 289 medical personnel; 92 surveys were completed, yielding a 32% response rate. (See Table 1 for information on response rate by job affiliation.) The survey was completed by 11 male and 81 female respondents. There were 36 surveys returned from nurses, 18 from IV team members, 19 from Child Life, and 19 from other professionals, such as administrators and physicians.

Primary Children's Hospital is part of Intermountain Healthcare, a regional, nonprofit healthcare network. Intermountain Healthcare provides care to about 60% of the Utah population. Primary Children's Hospital is a community pediatric hospital for Salt Lake County, as well as the only Level 1 Pediatric Trauma Center in the intermountain west (serving Wyoming, Nevada, Idaho, Montana, and Utah). PCH is associated with the Department of Pediatrics at the University of Utah, School of Medicine. It is a state-of-the-art hospital that offers treatment for nearly all complicated

pediatric patients in the region. PCH is a 289-bed hospital that includes a 50-bed neonatal intensive care unit (NICU), 24-bed short-stay outpatient unit in the Emergency Department, and 44-bed pediatric intensive care unit (PICU). Primary Children's Hospital treats approximately 130,000 ambulatory patients annually and has about 12,000 patients admitted annually (Intermountain Healthcare, 2014). Currently, there are a total of 6 treatment rooms in the Primary Children's Hospital, 1 in the Neuroscience Trauma Unit (NTU), 1 in the Children's Medical Unit (CMU), 1 in the Children's Surgical Unit (CSU), 2 in the Infant Medical Surgical Unit (IMSU), and 1 in the Immunocompromised Unit (ICS).

This study focused on nurses in the CMU and CSU, both of which had designated treatment rooms but were not utilizing these rooms for this purpose. One of the units was using the room as storage space and the other unit was using the room as a regular patient room. Administrators of these units were supportive to distribution of the survey to their staff. Other units were eliminated from consideration either because they utilized the treatment rooms for procedures other than regular IVs and blood draws, or their policy of utilizing treatment rooms was different. For example, in ICS, the unit's treatment room was used for lumbar puncture (LP) procedures and port accesses. For IMSU, patients were newborns and infants under the age of 2. Given their young ages, the philosophy of using treatment rooms was different in this unit. Finally, the Neuroscience Trauma Unit was eliminated because the patients often have head injuries and are unconscious so the policy of utilizing the treatment room was also quite different in this unit.

Procedure

Potential participants were contacted via a weekly electronic newsletter ("Weekly Wednesday") with detailed information about the study as well as an internet link to an electronic survey on the use of treatment rooms. The survey was available in English only. Emails were sent to potential participants from the unit supervisors for the IV Team, nurses, and Child Life Specialists. Physicians were invited to complete the survey via an email from the head of inpatient medicine. When participants clicked on the provided link, they were directed to an electronic survey. The time necessary to complete the survey was about 10-15 minutes. Respondents were prompted to submit the survey online when they had completed answering all of the questions. A reminder email to complete the survey was sent an average of 2-3 weeks after the initial invitation to participate in the survey with a link to the survey again provided. A second reminder email was sent approximately 4-5 weeks after initial survey distribution. The electronic survey was developed using Qualtrics software website, one of the most utilized enterprise survey technology suppliers (Qualtrics, 2014).

Measure

The survey was a mixture of open- and close-ended questions that addressed the perceived challenges and benefits of the use of treatment rooms for children aged 2-5 years old. There were a total of 31 questions on the survey, including 27 close-ended questions and four open-ended questions. For the close-ended questions, respondents rated each item on a 5-point Likert scale from 1 = strongly disagree to 5 = strongly agree. There were four categories of questions addressed in the close-ended portion of survey:

(1) administrative challenges of using treatment rooms, (2) benefits of treatment rooms, (3) negative impact on child by the usage of treatment rooms, and (4) general knowledge of and experience with treatment rooms.

First, the survey included eight items that addressed potential administrative challenges of using treatment rooms. Questions in this "challenges" category examined perceptions of whether taking children to treatment rooms would take too much time, and whether risks for infections were increased by using treatment rooms. Other challenges included potential scheduling conflicts and not having enough space in the hospital facilities to allow regular use of treatment rooms. The eight items were averaged to create a composite score of administrative challenges. Internal consistency of this scale was Cronbach's $\alpha = 0.88$. A sample question in this grouping was: "Having to transport a child to a treatment room adds an unnecessary complication to administering to the child's treatment."

Second, seven items addressed perceived benefits of using treatment rooms. For example, questions addressed the possibility of reducing children's stress and providing a "safe haven" by using treatment room for procedures, whether having separate treatment rooms for procedures would facilitate the presence of Child Life Specialists, and whether using treatment rooms would reduce risks of infection for the patients. Items were averaged to create a composite score of benefits; internal consistency of this scale was Cronbach's $\alpha = 0.85$. A sample question from this category was: "Moving children to treatment rooms for procedures will make it easier for Child Life Specialists to be present for these procedures."

Third, five questions directly addressed the potential negative impact on the child. For example, items addressed perceptions of whether children might feel more stressed after leaving their comfortable hospital rooms and whether they would become anxious whenever they were being transported to and from their hospital rooms. Items were averaged to create the composite score (Cronbach's $\alpha = 0.87$). A sample question was: "If procedures occur in treatment rooms, children will become anxious whenever we must move them from their rooms."

Fourth, four questions addressed the respondents' generalized knowledge of and experience with treatment rooms. For instance, there were questions that asked whether respondents had any opinions on the use of treatment rooms, their confidence in the benefits of treatment room usage, and whether they, in their professional capacity, had utilized treatment rooms in the past. Internal consistency of this scale was Cronbach's $\alpha = 0.74$. A sample question was: "I have been involved in administering procedures in a treatment room."

In addition to the close-ended questions, four open-ended questions were included: (1) What would you like to see in an ideal treatment room; (2) If you have concerns about the use of treatment rooms, please list up to three relevant issues, listing your most significant concern first; (3) If you believe there are or would be benefits to the use of treatment rooms, please list up to three of these benefits, starting with what you believe to be most beneficial; (4) If you have questions about the use of treatment rooms, please list up to three of your questions.

Table 1: Treatment Room Survey Respondents

Type of Affiliation	Number of Responses	Possible Sample Size	Percentage of Responses
Nurses	36	237	15%
IV Team	18	26	69%
Child Life	19	26	73%
Other	19	Unknown	-
Total	92	289	32%

NOTE: “Other” category involved other medical professionals such as administrators and physicians.

CHAPTER 3

RESULTS

Analysis of Close-Ended Items

Four sets of analyses were conducted. The first analysis was conducted to address whether perceptions of the challenges and benefits of the use of treatment rooms varied by professional affiliation. A multivariate analysis of variance (MANOVA) was utilized to look at group differences. The second set of analyses were conducted to determine whether there was a relationship between their experience in the medical field and their perceptions of the use of treatment rooms. Bivariate correlations were utilized to examine these associations. The third set of analyses of correlations were conducted to examine relationships among the four previously mentioned categories of perceptions of the use of treatment rooms. Finally, the fourth set of analyses were conducted to examine (1) whether medical personnel of different affiliation (i.e., physicians, nurses, IV team, and CLS) have had different experiences with the use of treatment rooms; and (2) whether their experience or involvement with the use of treatment rooms were related to their perceptions of the use of treatment rooms. A multivariate analysis of variance (MANOVA) was utilized for this analysis.

The first issue addressed was whether their perceptions of the challenges and benefits of the use of treatment rooms differed by professional affiliation (i.e., physician,

nurse, IV team, administrator, etc). That is, these analyses examined group differences in perceptions of benefits, administrative challenges, negative effect on child, and knowledge with treatment rooms based on occupation (see Table 2). A multivariate analysis of variance (MANOVA) with benefits, challenges, negative effect on child, and knowledge as the dependent variables, and occupation as the independent (between subjects) variable was conducted. There was a main effect of professional affiliation on administrative challenges, $F(3,84)=23.315$, $p=0.000$. Post hoc Bonferroni tests indicated that for the category of administrative challenge, nurses and IV team members reported higher means than did physicians and the Child Life Specialists (see Table 2). That is, nurses and IV team members perceived greater administrative challenges of using treatment rooms than did physicians and Child Life Specialists.

Second, there was a statistically significant difference among groups in their perceptions regarding treatment rooms having a negative impact on the child, $F(3,84)=9.93$, $p=0.000$. Bonferroni post hoc tests also indicated that nurses and IV team members perceived more negative impacts on children than did Child Life Specialists (see Table 2).

Third, there was a statistically significant difference among groups on their perceptions of benefits of treatment rooms, $F(3,84)=15.2$, $p=0.000$ with Child Life Specialists reporting a higher mean than the physicians, nurses, and members of the IV team (see Table 2). That is, the Child Life Specialists perceived more benefits to the use of treatment rooms than did the physicians, nurses, and the IV team.

Finally, there was a statistically significant difference among groups in their knowledge and experience with treatment rooms $F(3,84)=2.89$, $p=0.04$. However, when

examined with Bonferroni post hoc tests, none of the means were statistically different from one another.

A second set of analyses was conducted to examine the associations between medical professionals' experience in the medical field and their perceptions of the use of treatment rooms. Bivariate correlations were conducted between years of service and perceptions of administrative challenges, benefits, general knowledge, and negative impacts on the child. The only statistically significant correlation was between knowledge/experience of using treatment rooms with respondents' years of service, with $r(92)=.29$, $p=0.006$ (see Table 3). Generally, the more experience the professionals had, the more knowledge they had regarding treatment rooms.

Next, a third set of analyses of correlations were conducted to examine any existing relationships among 4 previously mentioned categories. The goal was to understand how the various dimensions of perceptions of the use of treatment rooms were related to one another. These correlation analyses revealed that responses to administrative challenge were negatively correlated with perceptions of benefits (r (92) = 0.66, $p < 0.001$) and positively correlated with responses to negative impact on child (r (92)=0.68, $p <0.001$). That is, perceptions of greater challenge were related to perceptions of fewer benefits and greater negative impact on child. Second, perceptions of benefits were negatively related to perceptions of negative impact on child (r (92)=0.76 $p <$ 0.001) (see Table 3). Professionals who perceived more benefits also perceived less negative impact on child.

A fourth set of analyses were conducted to examine (1) whether medical personnel of different affiliation (i.e., physicians, nurses, IV team, and CLS) had different

experiences with the use of treatment rooms; and (2) whether their experience or involvement with the use of treatment rooms impacted their perceptions of the use of treatment rooms. A group named "involved" was created based on respondents' answers to the item on the survey that stated "I have been involved in administering procedures in a treatment room." Responses greater than or equal to 4 (i.e., agree and strongly agree) were assigned to the "involved" group whereas responses less than 4 were categorized into the "not involved" group. Chi-Square analysis revealed that physicians and IV team members were more likely to be involved with the use of treatment rooms than expected by chance, whereas Child Life Specialists and nurses were less likely to be involved with the use of treatment rooms than expected by chance, χ^2 (3, N=88)= 12.63, p=0.006.

Second, a multivariate analysis of variance with perceptions of benefits, challenges, negative effect on child, and knowledge as the dependent variables and involvement group as the independent variable was conducted. This analysis indicated that those who were not involved in administering procedures in a treatment room saw greater benefit to the use of treatment rooms with $F(1,90)= 4.36$, p=0.04 compared to the involved group (see Table 4). This result indicates that personnel who were involved with the use of treatment rooms experienced some hurdles or concerns that lowered their perceptions of the benefits to their use. Furthermore, those who reported being involved with the use of treatment rooms also reported higher knowledge of treatment rooms with $F(1,90)=77.6$, p <0.001 compared to those who had not been involved (see Table 4).

Analysis of Open-Ended Items

Open-ended responses to each question were compiled and read repeatedly to identify themes that emerged. Once broad themes were identified, each response was categorized into different themes. It was interesting to see what the personnel perceived to be important in making up an ideal treatment room. Responses were categorized into patient-centered and personnel-centered responses. For the category of patient-centered ideas, respondents wanted a space that was inviting for the children with bright colors. In addition, many responses emphasized the importance of distraction opportunities for children in a treatment room. Medical personnel wanted to see a variety of distraction tools such as age-appropriate interactive toys, televisions and game consoles, music players, pictures, posters, and paintings on the walls, and prizes that could be used by medical staff and Child Life Specialists. One respondent noted:

"Warm friendly environment for the pt [patient], colorful area using colors appropriate for the age of the patients, perhaps equipment that can be used to distract the patient during the procedure."

For the personnel-centered responses, medical personnel requested practical, procedural accommodations in a treatment room such as having adequate/larger space, better lighting with dimmers, and fully stocked medical supplies. Respondents desired supplies and a physical environment that would enable them to easily complete medical procedures in the room. A sample response in this category was:

"More space around the bedside, supplies available in a closed cabinet, computer in the room, adjustable lighting, sink for hand washing, counter space for miscellaneous work (preparing specimens, etc.), portable table for sterile supplies, large sharps conainer

[container], large garbage can, pictures on the ceiling and walls and TV with video player and remote, phone with hospital directory, code and nurse call lights, O2 and suction, wall outlets everywhere, bedding supplies."

Next, when reviewing open-ended responses for concerns about the use of treatment rooms, a variety of worries were raised by the medical personnel. First, personnel feared that utilizing a treatment room would take too much time to administer procedures. Some of the concerns the medical staff noted were additional time it would take to: transport the patient, coordinate and assemble all the required professionals in the room, wait for the treatment room to be cleaned after another use, and wait for parents to also situate themselves by the bedside. Medical personnel also raised concerns about increasing the level of distress, stress, and fear of children by moving them to a treatment room for a procedure. They perceived that children's anticipation of pain would create more discomfort. Here was a sample response in this category:

"I think the anxiety builds if a child is moved to a treatment room, especially if they have received a procedure there previously."

Furthermore, concerns were raised that related to practical, procedural aspects of utilizing the treatment rooms such as availability, scheduling, and coordinating its use for multiple patients for a procedure, not having enough staff or resources to accommodate the transport process, and difficulties with infection control with using a common treatment room among different patients.

In terms of beliefs about benefits of the use of treatment rooms, some medical personnel indicated that they believed the patient's anxiety may be better when procedures are done in a different environment, and that kids may feel safer and more

secure in their inpatient hospital room. Other responses indicated that treatment rooms could be beneficial if the treatment rooms were better designed with adequate space and supplies. Some also noted that its use could make it easier for child life presence during procedures. However, there were also respondents who doubted the benefits or practicality of treatment rooms. For example, one respondent wrote:

"I'm told it is to help a child feel safe, I don't think though it makes that much of a difference to the patients who are only here for a short stay. They have not had the time to recognize their room from the treatment room. And 2-year-olds hate you no atter[matter] what you do."

Respondents also raised questions about the use of treatment rooms. They expressed multiple concerns about the implementation of treatment rooms. Here is a list of some of their concerns:

- How would they coordinate the use of a single treatment room with multiple patients?
- Who would transport patients to the treatment room?
- Would patients be moved to treatment rooms at night when they are sleeping?
- What ages are most benefited by the use of treatment rooms?
- For what procedures would the treatment room be used?
- Can treatment rooms be used for patients on infectious precautions?
- Is a treatment room a safer place to do procedures?

An additional concern surfaced when analyzing open-ended responses from those who have been involved with the use of treatment rooms, which was the lack of education on the issue. One respondent wrote:

"The education process to help other staff understand the psychological benefits of using a treatment room so that they can really be used the way that they are designed."

Table 2: Means and Standard Deviations of Responses by Job Title

	Physicians	Nurses	Child Life Specialists	IV Team	Entire Sample
Administrative Challenge	2.38(.38) [a]	3.56 (.63)[b]	2.50(.52)[a]	3.35(.56)[b]	3.13(.75)
Negative Impact on Child	2.93(.64)	3.37(.64) [a]	2.53(.73)[b]	3.54(.60)[a]	3.17(.75)
Benefit	3.20(.56) [b]	2.96(.57) [b]	3.83(.60)[a]	2.64(.56)[b]	3.12(.70)
Knowledge/Experience	3.94(.65)	3.39(.92)	3.91(.75)	3.86(.72)	3.67(.84)

Note: In each row, means with different superscripts were significantly different from one another based on Bonferronni post hoc test

Table 3: Correlation Table

Variables	1Chal	2 Neg	3 Ben	4Know	5 Yrs
1. Administrative Challenge	-	.68 ***	-0. 66***	-.16	-.09
2. Negative Impact on Child	.	-	-.76***	-0.03	-0.04
3. Benefits to Child	-	-	-	.01	-.05
4. High Knowledge	-	-	-	-	.29**
5. Years of Service	-	-	-	-	-

Note: *p <0.05, **p<0.01, and *** p< 0.001

Table 4: Means and Standard Deviations of Responses by Involvement

	Involved	Not Involved	*F* Value
Administrative Challenge	3.15(0.77)	3.17 (0.72)	0.07
Negative Impact on Child	3.23(0.76)	3.07 (0.68)	0.79
Benefit	3.02(0.68)	3.35 (0.68)	4.35*
Knowledge/Experience	3.99 (0.59)	2.68 (0.68)	77.64***

Note: *p <0.05, *** p< 0.001

CHAPTER 4

DISCUSSION

This research adds valuable information to the treatment room literature, as there is a dearth of research on this topic. As stated previously, policies set forth by the American Academy of Pediatrics as well as the Child Life Council recommend the use of treatment rooms for procedures, yet there is only a single research study that directly addressed this issue. This current survey study sheds some light on the perceptions of treatment rooms by medical personnel currently working in a hospital that has treatment rooms available, but which does not have a consistent policy on their use. Understanding staff perceptions of treatment rooms enables a better understanding of how treatment rooms should be structured and how policies for the future might be shaped. The findings suggest that medical professionals had quite mixed perceptions about the use of treatment rooms, and these perceptions differed by profession.

The Primary Children's Hospital where this research was conducted has six treatment rooms in the facility. However, in two of their medical units, a treatment room is permanently being used as a storage space and another is being used as a regular inpatient room most of the time. Underutilization of treatment rooms in these units was a key motivation behind this research study; the goal was to examine medical staff's

perceptions of treatment rooms and to better understand their concerns and the challenges of using the treatment rooms.

This study reveals that there are differences in perceptions about the use of treatment rooms between different professions in the hospital. Physicians seemed to have the greatest knowledge about the treatment rooms and perceived the lowest level of administrative challenge, whereas nurses perceived the highest level of administrative challenges and also perceived the lowest level of experience and knowledge. This is surprising given the fact that nurses are the ones who deal with managing patients' day-to-day procedures and care in hospital settings.

Furthermore, there was a gap among medical personnel in their beliefs of treatment room usage effects on children. Child Life Specialists perceived the greatest benefits as well as the lowest levels for the negative impact on child, whereas members of the IV team perceived the lowest level of benefits and the greatest negative impact on child. Child Life Specialists focus on the socioemotional well-being of the child, including the long-term well-being of the child (Thompson, 2009). Nurses and IV team members may see the child express immediate distress with the use of treatment rooms, but may be less focused on the long-term impacts of hospitalization on the child. Child Life Specialists may perceive that although the use of treatment rooms increases immediate distress, enabling the child's room to be a safe haven has long-term benefits that outweigh the greater distress for the child during the IV placement.

Moreover, those who reported having been involved with the use of treatment rooms had greater knowledge regarding its use yet reported less benefit to its use than those who have not been involved with its use. This is highly interesting and may be

explained a number of ways. The staff who utilized treatment rooms in the past may feel that their use was indeed inconvenient. Or maybe they saw that moving children to treatment rooms did actually increase their level of distress. Furthermore, the treatment rooms may be poorly designed or equipped so the staff may believe their usage were inconvenient for procedures in the past. Finally, it may be due to the hospital unit's inconsistent use of treatment rooms, consequently making the medical personnel feel their usage disrupts the rhythm of their work.

Responses in the open-ended portion of this study indicate that there were many perceived challenges with the use of treatment rooms such as additional time, coordinating and scheduling concerns, and worries regarding infection control. Furthermore, medical personnel have a lot of questions pertaining to the use of treatment rooms, such as their efficacy and questions about staff roles and resources.

Results of the study suggest that if hospitals are interested in advocating for the use of treatment rooms for their patients, their usage has to be facilitated by providing appropriate education and accommodation for their medical staff from the Child Life Specialists or the hospital administration. Not only does this study suggest medical personnel would also need to be informed and educated on how to properly utilize treatment rooms and their psychological benefit for the patients, but they also need more staffing, time, and safety accommodations from the management as noted in the practical concerns raised in this study.

CHAPTER 5

STRENGTHS AND LIMITATIONS

There are multiple strengths to this study. First, the current study adds valuable information to the treatment room literature. There are huge gaps in the literature. As stated previously, there was only one research study that directly looked at the issue of treatment rooms. Second, although there are some policies that exist in medical and child life literature regarding treatment rooms, there are hardly any data to support these policies. Third, the child life team at Primary Children's Hospital asked to have the study conducted in the hospital, which signifies that the topic is of high interest at the hospital. On the other hand, there were some weaknesses in the study. First, selection bias is a concern given that the study resulted in a relatively low response rate of 32%. Those who chose to answer the survey might be the ones that hold extreme views on either side of the issue. Second, the study was conducted at a single pediatric hospital in the Intermountain West with a small sample size. Consequently, this limited the study's generalizability. Moreover, unique hospital characteristics, such as smaller units and hospital space, may have influenced medical personnel's perceptions of treatment rooms of their own units that further limit the study's generalizability.

It is interesting to note that medical personnel, depending on their affiliation, were quite divided on the issue of treatment rooms. Furthermore, medical personnel had

many questions about and legitimate, practical concerns for their use. It would appear necessary for hospital administration and Child Life Specialists to acknowledge the need for suitable education and support for their staff if the treatment rooms are recommended for use per hospital policy. Furthermore, medical personnel's ideas on what ideal treatment rooms look like need to be scrutinized and appropriately accommodated if their usage is desired in each hospital setting.

APPENDIX A

LEVEL 1 PEDIATRIC TRAUMA CENTER WEBSITES THAT MENTION THE USE OF THE TREATMENT ROOMS

1. Phoenix Children's Hospital, AZ

   "We want your child to see the hospital bed as a safe place. Your child may be taken into the treatment room to get the IV. This means your child may learn that going to the treatment room means something will happen. Your child may cry on the way to the room"

   Retrieved from: http://www.phoenixchildrens.org/sites/default/files/healtinformation/the-emily-center/child-health-topics/handouts/IVs-107.pdf

2. UC Davis Children's Hospital, CA

   "A separate treatment room for unpleasant or painful procedures, such as starting an intravenous line, helps to preserve their room as a "safe place."

   Retrieved from: http://www.ucdmc.ucdavis.edu/nurse/clinicalareas/childrens.html

3. University of Iowa Children's Hospital, IA

   Under description of "routine procedures" the hospital website notes:

   "In addition to blood tests, there are two other procedures that many children will require to check for the presence of cancer cells. These two procedures are bone marrow aspirations and lumbar punctures (spinal taps). These procedures can be frightening for children. They are regularly done with sedation and pain medication so children experience minimal discomfort and often have no recall of the procedure. Technically these procedures are often quite simple to perform and are usually done in the treatment room."

   Retrieved from: http://www.uichildrens.org/childrens-content.aspx?id=229133

4. Kosair Children's Hospital, KY

   In their guidelines to help children with pain, they list a treatment room as one of their options:
   "Request to use a treatment room for painful procedures."

   Retrieved from: http://www.kosairchildrenshospital.com/helpingyourchildwithpain

5. University of Kentucky Children's Hospital, KY

   "Each unit also has a treatment room where doctors and nurses perform simple procedures. "

   Retrieved from: http://ukhealthcare.uky.edu/KCH/about-KCH/tour2/

6. Children's Hospital Boston, MA

   In their "Practical Parent Guide" manual, on page 16: "Create 'safe zones' where painful medical procedures cannot occur" the website notes:

   "It is best if painful procedures can be done in a treatment room, not in your child's bed if at all possible. This supports your child's sense of security in their room and may reduce sleep disruptions."

   Retrieved from:
   http://www.childrenshospital.org/~/media/HealthTopics%20KidsMD/Tests%20and%20Procedures/Liver%20Transplantation/Liver_parent_guide2.ashx

7. Cincinnati Children's Hospital, OH

   For Pediatric Liver Care Center:

   "A separate treatment room for inpatient care procedures."

   Retrieved from: http://www.cincinnatichildrens.org/service/l/liver-care/professionals/

8. Rainbow Babies and Children's Hospital, OH

   Under recommendations for "Helping Your Child Cope with Hospitalization"; For Toddlers (1-3 years) and Preschoolers (3-5 years)

   "Offering your child realistic choices when possible (for example, "Do you want to walk to the treatment room or let me carry you?")"

Retrieved from: http://www.uhhospitals.org/rainbow/services/family-and-child-life-services/child-life/suggestions-for-parents

9. LeBonheur Children's Hospital, TN

   Child life Blog:

   "During this rotation, we learned the basics of introducing Child Life to patients and families, how to write a chart note, and the importance of using the treatment room when possible."

   Retrieved from: http://www.lebonheur.org/blogs/childlifeblog/tags/a_day_in_the_life

10. Children's Memorial Hermann Hospital, TX

    "Central lines are inserted in the operating room. In some situations, central lines are inserted at the bedside or in the treatment room."

    Retrieved from: http://childrens.memorialhermann.org/services/central-venous-access/

11. American Family Children's Hospital at the University of WI, WI

    "Treatment room: On the inpatient unit, a place just for procedures that allows your child's room to be a safe place."

    Retrieved from: http://www.uwhealthkids.org/patient-guide/child-life-teaching-sheets-iv-intravenous-catheter/39226

12. Children's Hospital of Wisconsin, WI

    "When it is best for your child, we will perform procedures in a treatment room so your child feels safe in his or her own room and in the playroom."

    Retrieved from: http://www.chw.org/medical-care/pain-management-program/treatments/comfort-zone/

APPENDIX B

PEDIATRIC HEALTHCARE FACILITIES AND HOSPITAL ASSOCIATION THAT IDENTIFY THE USE OF A TREATMENT ROOM (NON-LEVEL 1 TRAUMA CENTER)

1. Main Line Health, Pennsylvania

"We want to reassure children that their rooms are a friendly place where they are safe. Sometimes a child's medical care may involve a procedure that can be uncomfortable. Therefore, whenever possible, such care will be delivered in a separate treatment room. At that time, the healthcare team will discuss with you the importance of your participation or if it would be better for you to remain outside the treatment room."

Retrieved from: http://www.mainlinehealth.org/oth/Page.asp?PageID=OTH001561

2. Lakewood Ranch Medical Center, Florida

"Your child may need to have a diagnostic test or procedure that requires him or her to go to a different area of the hospital, such as the radiology or surgical departments, depending on medical needs. There is also a treatment room located in the Pediatric Unit where your child may be taken for IV placement. Moving your child to the treatment room for such procedures, rather than remaining in their room, helps keep your child's room a place where he or she feels comfortable and safe."

Retrieved from: http://www.lakewoodranchmedicalcenter.com/hospital-services/pediatric-unit

3. Banner Thunderbird Medical Center, Arizona

"Because we want children to feel safe in their hospital rooms, we have a designated treatment room where all procedures – like blood draws – are done."

Retrieved from: http://www.bannerhealth.com/Locations/Arizona/Banner+Thunderbird+Medical+Center/Programs+and+Services/Pediatrics/_Pediatric+Services.htm

4. Advocate Health care, Illinois

"Procedures are performed in treatment areas that are separate from the child's room which remains a safe haven throughout their stay."

Retrieved from: http://www.advocatehealth.com/hopechildrenshospital

5. Sutter Health CPMC, California

"To make a child feel safe in his/her room, we try not to do any procedures — especially painful ones — in the room. Instead, this treatment room is used for procedures such as spinal taps and IVs. It has a television and artwork to help provide distraction."

Retrieved from: http://www.cpmc.org/advanced/pediatrics/patients/peds-tour.html

6. Seattle Children's, Washington

"Each level has separate treatment rooms for certain treatments that could be considered painful for your child. This is so your child's room always feels like a safe place. This is the standard of pediatric care across the country."

Retrieved from: https://www.seattlechildrens.org/clinics-programs/cancer/services/cancer-care-unit/

7. Bronson Healthcare, Minnesota

"Our Pediatric Treatment Rooms received a much needed makeover. Inpatient pediatric patients are taken to a pediatric treatment room any time they need to receive any type of small treatment."

Retrieved from: https://www.bronsonhealth.com/bronson-health-foundation/children-s-hospital-fund

8. RWJ University Hospital, New Jersey

"Many of BMSCH's pediatric patients require procedures in treatment rooms. These rooms are often where a child's most difficult and painful experiences – such as lumbar punctures, IV insertions and blood draws – occur. Thanks to Starlight, RWJUH this week unveiled its new "Starlight® Site Care Room," which provides a welcoming environment that decreases anxiety, alleviates stress, and soothes and calms our youngest patients."

Retrieved from: http://www.rwjuhfdn.org/rwjuh-unveils-renovated-reimagined-pediatric-treatment-room/

9. Boston Medical Center, Massachusetts

"Our staff is committed to making your child as comfortable as possible while in the hospital, especially during procedures such as drawing blood. These procedures are done in special treatment rooms that are equipped with supplies to help children feel more at ease."

Retrieved from: http://www.bmc.org/pediatricsinpatient/services.htm

10. Peggy V. Helmerich Women's Health Center, Oklahoma

"Our treatment room was designed specifically for the pediatric patient. We practice diversion techniques for procedures like lab draws or IV starts. Our nurses and Child Life Specialists use toys to distract the child and help ease the procedure. The treatment room assists in keeping the child's room a 'safe place.'"

Retrieved from: http://helmerichwomenscenter.com/pediatrics

11. Children's Hospital of the King's Daughters, Virginia

"When your child's doctor decides that an IV is needed, the nurse or clinician will put the IV in place. The child is often taken to the treatment room for this. Other staff members may also be there to help hold and comfort your child. Child Life team members may be available to help prepare your child for procedures."

Retrieved from: http://www.chkd.org/Patients-and-Families/Health-Library/Way-to-Grow/IV,-Having-an/

12. Saint Joseph's Children's Hospital, Marshfield, Wisconsin

"The policy of using only the treatment room for procedures maintains the bed as a safe haven…"

Retrieved from:
http://ministryhealth.org/SaintJosephsChildrensHospital/ChildLifeProgram/Positioning_for_Comfort_2007.pdf

13. Lowell General Hospital, Massachusetts

"We are committed to making your child as comfortable as possible while in the hospital, especially during procedures such as drawing blood. These procedures are done in a

special treatment room that is equipped with supplies to help make children feel more at ease."

Retrieved from: http://www.lowellgeneral.org/go/services-and-specialties/pediatrics-the-children-s-place/inpatient-unit

14. News & Resources from the Children's Hospital Association. *Building Technology Behind the Scenes.*

*"*Within each of these institutions, patient rooms are designated "pain-free zones." This requires the addition of a treatment room within the patient unit, which is equipped with procedure lights, infusion pumps and physiological monitors, as well as other standard medical supplies and equipment."

Retrieved from: http://www.childrenshospitals.net/AM/Template.cfm?Section=t&template=/CM/ContentDisplay.cfm&ContentID=10876

15. Bon Secours Richmond Health System, Virginia (more than 40 locations)

"If lab work or an IV is needed, your child will be taken to the treatment room and not his or her patient room for the procedure. We do not want your child to associate his or her room with pain."

Retrieved from: http://richmond.bonsecours.com/our-services-childrens-services-going-to-the-hospital-emergency-care-what-to-expect-medical-stay-without-surgery.html

16. St. Luke's Meridian Medical Center, Idaho

"There is also a separate treatment room so children don't associate painful or frightening procedures with their own patient room. The treatment room features high intensity light to help caregivers find tiny veins, and a child resuscitation cart with drawers that are color-coded by age for fast action in a pediatric cardiac emergency."

Retrieved from: http://www.stlukesonline.org/meridian/specialties_and_services/Pediatric_Unit/

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